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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,522	11/05/2001	Rainer Beer	951/49898	1389

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EXAMINER	
GRIER, LAURA A	
ART UNIT	**PAPER NUMBER**
2644	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/868,522	BEER ET AL.	
	Examiner	Art Unit	
	Laura A. Grier	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 3-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 3-7 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The indicated allowability of claim 4 is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Milne et al. in view of Kaplan, U. S. Patent No. 4180782.

Regarding **claim 3**, Milne et al. (herein, Milne) discloses a distributed digital signal processing for vehicle audio systems (figures 1-3). Milne's disclosure comprises a radio (10) that includes an optical receiver and a SPDIF receiver (references 40 and 42, and col. 2, lines 64-67 and col. 1), which reads on an audio signal receiver;

amplifiers (76) coupled by a digital data bus which is a fiber optic data link via the connection of the DSP (20) module(s) which is coupled to the receivers (col. 3, lines 18-30 and figure 3), wherein it obvious that audio system is being powered by the use of power source of the vehicle , which reads on at least one amplifier connected by an optical wave guide, and each amplifier is coupled to a speaker (22), which reads on a loudspeaker;

and with each amplifier connected to a speaker via crossover filter characteristics, and one of the speakers being a woofer, and additional subwoofer (col. 2, lines 37-44), reads on a

separate amplifier provided for low audio frequencies. However, Milne fails to disclose the separate amplifier for the low frequencies functioning at a higher operating voltage.

Regarding the separate amplifier provided for higher operating voltage, in a similar field of endeavor, Kaplan discloses amplifier with the capability of providing a higher operating voltage for low frequency signals (col. 1, lines 61-68, and col. 2, lines 62- col. 3, lines 1-16).

It would have been obvious to one ordinary skill in the art at the time invention was made to modify the invention of Milne by providing a separate amplifier for the low frequency signals for the purpose of providing optimal low frequency response for high-fidelity systems in automobiles as taught by Kaplan; wherein, it is well known the art for additional (more) power to be applied to a low frequency signal than to a high frequency signal in an automobile.

Regarding claim 4, Milne and Kaplan disclose everything claimed as applied above (see claim 3). Milne and Kaplan (Kaplan) further discloses that the operating voltage of the amplifier ranges to be four times the normal operating voltage of a conventional voltage (12-14V) of a battery of a automobile (col. 3, lines 1-16), wherein if the conventional voltage becomes 4 times the normal operating voltage, then the operating voltage would range from 48-56V, which reads on the operating voltage of the separate amplifier being at least equal to 42 volt in comparison to 12 volt.

Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Milne by providing a separate amplifier with such capabilities, particularly for the low frequency signals for the purpose of providing optimal low frequency response for high-fidelity systems in automobiles as taught by Kaplan; wherein, it

is well known the art for additional (more) power to be applied to a low frequency signal than to a high frequency signal in an automobile.

4. **Claims 5-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Milne in view of House, U. S.Patent No. 4809338.

Regarding **claims 5-6**, Milne discloses a distributed digital signal processing for vehicle audio systems (figures 1-3). Milne's disclosure comprises a radio (10) that includes an optical receiver and a SPDIF receiver (references 40 and 42, and col. 2, lines 64-67 and col. 1), which reads on an audio signal receiver;

amplifiers (76) coupled by a digital data bus which is a fiber optic data link via the connection of the DSP (20) module(s) which is coupled to the receivers (col. 3, lines 18-30 and figure 3), wherein it obvious that audio system is being powered by the use of power source of the vehicle, which reads on a first amplifier connected by an optical wave guide with the receiver, and a second amplifier connected by another optical wave guide with the receiver;

the speakers (22) are each coupled to an amplifier, wherein the speakers include a woofer, and additional subwoofer (col. 2, lines 37-44), which reads on at least one low frequency speaker coupled to a first amplifier; and

the speakers (22) also include a tweeter (col. 2, lines 37-44), which reads on at least one high frequency speaker coupled to a second amplifier. However, Milne fails to disclose the amplifiers having different operating voltages. The examiner maintains that such operating voltages were well known in the art, wherein, additional (more) power is applied to a low freqeuency signal than to a high frequency signal in an automobile.

Regarding the different operating voltages, House discloses a low frequency signal receiving more operating voltage, via a power amplifier, than a high frequency signal (col. 2, lines 57-64), wherein it obvious that ETR head end comprises an amplifier as well. It would have been obvious to one ordinary skill in the art at the time invention was made to modify the invention of Milne by providing different operating frequencies for two different amplifiers for the purpose of reducing distortion and increasing the fidelity of low frequencies signals.

5. **Claim 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Milne and House in view of Kaplan.

Regarding claim 7, Milne and House discloses everything claimed as applied above (see claim 6). However, Milne and House fail to specifically disclose the voltage of the 1st amplifier more that twice the voltage supplied to the second amplifier.

Regarding the 1st amplifier voltage being more than twice the voltage of 2nd amplifier, in a similar field of endeavor, Kaplan discloses amplifier with the capability of providing a higher operating voltage for low frequency signals (col. 1, lines 61-68, and col. 2, lines 62- col. 3, lines 1-16), wherein the capability is at least twice more than the convention power amplifier.

It would have been obvious to one ordinary skill in the art at the time invention was made to modify the invention of Milne by providing such an amplifier for the low frequency signals for the purpose of providing optimal low frequency response for high-fidelity systems in automobiles.

Response to Arguments

6. Applicant's arguments filed 4/14/05 have been fully considered but they are not persuasive.

The applicant's arguments are directed to the combined references of prior art failing to disclose the claimed invention in respect to two different amplifiers supplying different being voltages for driving two different frequencies. However, the art rejection of combined rejections with Milne as the primary reference has been maintained because the Milne reference indicates an automobile with audio system, wherein more than one amplifier is being used to drive the respective frequency, wherein it obvious that audio system is being powered by the use of power source of the vehicle, and it is obvious to function of a low frequency signal that additional power is required to drive such a signal. And, the teachings of Kaplan is provide to teach that is known to provide an amplifier with a vehicle that is enhanced in power for optimal performance of a low frequency signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A. Grier whose telephone number is (571) 272-7518. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura A. Grier
July 6, 2005